

CATS

CAPITOL AREA TIMEX/SINCLAIR
USERS GROUP

NEWSLETTER

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From the Editor

"May you live in interesting times."

That ancient Chinese curse about sums up last month's events. First, we had the news of Amstrad's buyout of Sinclair Research (covered later in this issue). Shortly after that, and just before the April meeting, came the news of the buyout of Sinclair USA by A+. This was accompanied by a vigorous shakeout of US dealers. A+ promises more aggressive promotion of the QL, while shifting responsibility for service from the distributor to the dealer level. Prices should remain stable, or drop slightly. I have heard no speculation about the relation between A+ and Amstrad - I guess we are to cross our fingers and hope.

Next, we come to the club's purchase of SCLD chips from Portugal. Because of the Timex computerfest on May 3-4, it was decided to push for rapid shipment of the order. Accordingly, payment for the 100 chips was wired to Timex Portugal. Timex Portugal was prompt in air-freighting them here, BUT they ended up in Kennedy Intl on April 11. From there, they trickled down, accumulating air-freight charges, through LaGuardia and National, finally ending up at Dulles (so that they could be cleared through Customs) on the 23rd! As time was running out, I spent two mornings out at Dulles getting them out of hock. I have never seen civil servants as aggressively unhelpful as the main office customs personnel. For your information, here are a list of importation expenses:

Air freight, Portugal-USA:	58.00
" Kennedy-National:	41.00
Import Duty:	free
Since the chips were made in the Phillipines...	
Import Bond:	40.00
Import Registration:	10.00
And since I didn't have time to master a 3/4" thick manual of importation procedures on my own.....	
Import broker fee:	90.00

I'm sure that some money was wasted, as there wasn't time to shop for best price on these "services". I did learn that the \$100.00 of paperwork could have been avoided if the value of the shipment had been under \$1000.00. Oh well.

And the chips? They don't work. L.I.S.T. Newsletter had reviewed the TC 2068 last May, and commented that the chip's number had changed. Because of that, I had tested several SCLD chips in my socketed machine; they had all worked, in spite of differing chip numbers. Well, the Portugal SCLD's are marked TS 2068, but they don't work.

What now? There is some speculation that the chips may be functionally identical, needing only a few jumpers to be adapted to our machines. I am writing to Portugal, explaining the problem. If Portugal is cooperative, and there are no more than five jumpers needed, we will proceed to sell the chips as planned. If not, we will attempt to return the chips for a refund.

I wish to repeat my thanks to the two members that have financially backed the club in this venture, and apologise for how it turned out. The lateness of the n/1 is due to the effort involved in getting this chip business worked through.

Lastly, we have the Midwest T/S Computerfest. A number of members are going, and I am looking forward to the stories they will bring back with them. Which brings us to...

The May Meeting

Due to the press of other business, no agenda has been planned, but you are sure to hear about the latest developments in the world of T/S computing. If nothing better develops, I'll give a demo of Jack Dohoney's M Script version 5, and show how to get M Script to print double columns. See you there!

Mark Fisher
P.S. Please fill out the equipment survey on p.11 & bring it to the Mtg - or mail it in.

Beginner's Corner

Dear Mark,
I have been inspired by the Beginner's corner, and hope that you have the time to confirm my understanding and answer the questions below about the TS-2000's video display.

The TS-2000 displays 32 characters across the screen, and 24 rows. Since each character is stored in one byte, the TS devotes 256 bits per column or 6144 (256*24) bits for the screen display. Because the memory location of the video display starts at 16384, one may think that if you POKE 22528, such as POKE 22528,128, a nice dot will appear at the bottom of your screen. Well, it does not. The last address I can POKE and get a dot is 22462. Assuming my calculations are correct, 1) Why doesn't a dot appear at address 22528, 2) what happened to the 66 bits between 22528 and 22462, and 3) why isn't the difference some multiple of eight?

Thanks,
Jerry

Dear Jerry (and all those others that didn't have the nerve to ask):

I'm afraid that there are some errors in your calculations, partly stemming from a confusion between bits and bytes, but thanks for speaking up. I'll go over a bit of the basic ground, and then cover your question.

Display files come in two flavors. The simplest is character mapped. In this type of file, each character position on the screen is mirrored by a single byte that holds the code for that position. This system is used by many of the early generation of computers - including the Kaypro and TS1000. In order to draw the character's shape on the screen, the screen driver program takes each character byte, looks up its shape in a table, and sends the shape information to the electron beam that is scanning the screen at the correct instant.

Its advantage is that it doesn't take up much space. While there may be 25 "a"s on the screen at once, the shape of an "a" need only be defined once. In addition, it is easy to PEEK into the display file and read what is held there. The disadvantage is that nothing can be put on the screen that hasn't been defined in the character table.

"Second Generation" computers, such as the 2068, use a bit mapped display file. Each dot on the screen that can be "lit up" is represented by a single bit in the file. A screen can contain a LOT of bits. The standard 2068 display is 175x255 bits, or a total of 44,625 bits! The double display file, as used in the 64 column mode, contains twice that.

Why go to all that trouble? Because it is then easy to draw any shape desired on the screen - so that we can have little Pac-men, spiders, etc., running around when we want them (or elaborate full-screen paintings, such as the title screen to Penetrator). The disadvantages here are a requirement for a lot of RAM to hold the file, and a more difficult time in PEEKing

information off the screen.

To answer your question: Yes, the 2068 screen is composed of 24 rows of 32 characters each, or a total of 768 characters. But, each character of information is held in eight bytes rather than one, or a total of 6144 bytes. You are right that the display file starts at 16384, but it stretches to 22527. 22528 is the start of the Attributes file (next month). POKEing above 22462 is fine, but not in immediate mode: the operating system clears the bottom two lines when it reports back to you. Try POKE 22527,255: PAUSE 0 and you'll see what happens.

The difference you found isn't a multiple of eight because of the strange system Sinclair used to encode the screen. Just try to use POKE to blacken one byte directly under another and you'll see what I mean. This is covered on page 250 of the 2068 manual.

By the way, try CLS, then PRINT "A". Now try to find that "A" by PRINT CHR\$ PEEK (d.file). You won't be able to - the "A" is drawn to the screen bit by bit. The only way to read a character off the screen on the 2068 is to use the BASIC function SCREEN (line, col).

OK, people, Who's next?

ALERT! ALERT! 1000/MODEM ALERT!

According to N.Y.T.S.E. Network n/1, 4/86, the Anchor MODEM boards will not work properly and may even blow circuits in the 1000 unless they have ferrite beads on each conductor of the cable near the computer end of the cable. Not all the bare boards being sold by various dealers have these little beads. They are available from Electronics Plus 2 10/\$1.00 or so. The beads are not needed on the 2068. This from Marc Kloppert of NYTSE.

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June 14
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Give a hoot!
 Contribute!
(Articles, that is.) C.A.T.S. 2 May

DUAL-SCREEN MODE

I have been intrigued by the idea of the Dual-Screen Mode as mentioned in the 2068 User Manual (p.248). That uses a second display file which may be shown on the screen instantaneously on command. The simplified M/C program in Figure 1 will set that up.

It may be used for menus, instructions or graphics which are to be called up repeatedly by a program. But it also gives us an opportunity to explore more of the functions of the 2068.

The SET-UP portion of the program first switches to the Extension ROM (EXROM). There it calls up the CHNG_V routine, which rearranges the memory area and establishes the second display file (see p.254). After that it switches back to the Home ROM. DF1-TO-DF2 copies the contents of Display File 1 into Display File 2.

To load the M/C, run the program in Figure 2, manually entering the decimal inputs shown and SAVE the CODE for future use. Before using, CLEAR 63199.

Enter RAND USR 63200 to switch from the normal case (Mode 0) to Mode 128, in which the two display files are available, with Display File 1 (DF1) on the screen. The screen may then be filled from the keyboard or memory, as usual.

When it is desired to store the DF1 contents in DF2, enter RAND USR 63224. DF1 is still showing on the screen, which may now be cleared and loaded with new material.

To display DF2 (Mode 1) just enter OUT 255,1. To return DF1 to the screen (Mode 128) enter OUT 255,128. But one note of caution - when in Mode 1 (DF2) any keyboard inputs or error messages will go to DF1 and will not be seen on the DF2 screen. A command to return to DF1, such as OUT 255,128, will still be effective but will not be seen and so must be entered very carefully to avoid error. It is preferable for a Mode 1 command to include a return instruction. For example, with OUT 255,1: PAUSE 0 :OUT 255,128 the return to DF1 will be completed accurately when any key is pressed.

Some alternatives:

1-To return to the one-display mode (Mode 0) and restore the memory areas to normal, enter RAND USR 63204. However, this is not normally needed. Once Mode

128 is in use, all the functions may be used with DF1, whether or not DF2 is used.

2-If there is occasion to transfer a display from DF2 to DF1, possibly to revise a part of DF2 or to copy DF2, enter RAND USR 63225. But note that this is not needed to just put DF2 on the screen. That is done with OUT 255,1.

3-As a stunt, with 2 messages loaded into DF1 and DF2, you might enter OUT 255,6 or OUT 255,62 to demonstrate the "64-column mode" which puts both displays on the screen at once, with the characters interleaved.

4-To COPY DF2 without disturbing DF1 use the following short M/C program:

```
COPY DF2      DI
              LD B,176
              LD HL,24576
              CALL 2568
              RET
```

This redirects the printer to the start of DF2 and then calls in the regular printer routine. POKE the 10 bytes starting at 63246 with: 243,6,176,33,0,96,205,8,10,201. For COPY DF2 enter RAND USR 63246. This may be done with DF1 on the screen.

H.E.Ueppler

```
SET-UP      LD A,128
            JR,1
            XOR A
            PUSH AF
            LD A,128
            OUT 255,A
            LD A,1
            OUT 244,A
            POP AF
            CALL CHNG_V
            LD (VIDMOD),A
            XOR A
            OUT 244,A
DF1-TO-DF2  AND A
            LD HL,16384
            LD DE,24576
            LD BC,6912
            JR NC,1
            EX DE,HL
            LD A,(VIDMOD)
            CP 0
            RET Z
            LDIR
            RET

CLEAR      63199
SET-UP      RAND USR 63200
DF1-TO-DF2  RAND USR 63224
MODE 128 (DF1) OUT 255,128
MODE 1 (DF2) OUT 255,1
```

```
10 FOR N=63200 TO 63245
20 INPUT(N); " ";B
30 POKE N,B
40 PRINT N;" ";PEEK N
50 NEXT N
```

```
INPUT the following:62,128,24,1,
175,245,62,128,211,255,62,1,211,
244,241,205,142,14,50,194,92,
175,211,244,167,33,0,64,17,0,96,
1,0,27,48,1,235,56,194,92,254,0,
200,237,176,201.
```

Fig. 2
Decimal
Loader

Fig. 1
M/C Prog.

T/S Tinyboard

By Flashware (c) 1986

Edited and revised by Mark Fisher

T/S TINYBOARD was begun as an experiment in how the MODEM works. The first step in the beginning was to find out about the hardware inside the Westridge MODEM. The controlling chip is an 8251 USART. Further information about the 8251 can be found in the Intel 8080 Users Manual. The software in its present state is fully operational, even though it is crude. I hope by releasing it to public domain many improvements will be made. All of the present controls may not be to the sysop's liking. It is written in BASIC with named variables for all modules so modification should be fairly easy.

Using the program is fairly easy. It has been tested for many weeks here in Cincinatti. The first thing you see when you LOAD is the Flashware logo, followed by messages that ask whether you want to LOAD a message base and logon bulletin. Since you are just starting, the answer to both of these questions is no. The program will then immediately go to autoanswer mode. From there, the sysop can exit to Edit mode by pressing NOT (symb-S). Operation of the program can be monitored at all times by watching the screen.

Some of the original research on this hardware came from Randy Kuhn of Cincinatti TSUG. It is his basic autoanswer routine. Many people have told me that I shouldn't release the program to public domain, but rather sell it. I feel that in order to survive we are going to have to help each other. Make any changes you want to in the software - but if you make significant improvements please post them to me so that we all may benefit.

If anyone puts it up full time let me know - I would like to call.

Randy/Lucy Gordon
E-MAIL #71106,262
TSUG of Cincinatti
11 Funston Lane
Cincinatti, OH 45218

Mark Fisher's Revision

I'm not sure the Randy and Lucy would recognise their creation in this listing; I've changed almost every line number in an attempt to clarify the program's flow. Major changes include:

- 1) I have pulled the Send and Recieve routines out into subroutines, rather than repeat them over and over in the program. Since there is an ON ERR return to the Quit routine if a glitch occurs in transmission, unused RETURN values could be left in the machine stack, causing a crash. To avoid this, I established FN b, which calculates a value for the variable RET. Rather than GO SUB, I GO TO Intake

CRYPTOGRAM Solution:

YOUR CATS WERE BETTER
BOTH IN BOOK HEAVEN TRYING NOT TO ENVY
THE GREAT CREATOR. WELL, PERHAPS THERE
WAS SOME BAK, THEN GREAT COMPUTING MET

C.A.T.S

and return via GO TO RET.

- 2) The message base may be browsed through the Read menu, allowing listing messages by sender, addressee, or number. I would like to implement a variable length message base to conserve memory (or, perhaps, store the messages on disk).
- 3) The Timer routine has been greatly streamlined and incorporated into the Main Menu title.
- 4) Line 9025 loads AERCO print driver code. Modify or omit as needed for your system. If you omit it, don't forget to modify line 9810 as well.

I wish I could say that this version has been thoroughly tested. I have used it extensively between two Westridge MODEMS in my home, and it works well. It has also been used through phone lines to a 2068 with no problems, and a 1000 with a few glitches. An attempt to access it from a MacIntosh failed.

Have fun! If you can start up a CATS version of Tinyboard, let me know. All we need is a member that can afford to leave his MODEM hooked to a line for some fixed part of a day on a regular basis. I think the club could even be persuaded to loan a MODEM to the member that volunteers to be the sysop.

MF

```
1 CLEAR 64000: LET t$= "*****"
* T/S Tinyboard ** by Flashware *
* (c) 1986 ** Randy/Lucy Gordon **
* TSUG Cincinatti, OH *****
.
10 LET t$= t$+ " Edited by Mark Fisher, CATS"
20 DEF FN b(=1+PEEK 23621+256*PEEK 23622: REM current line+1
30 GO TO 9000
400 REM *** Newline *****
410 RANDOMIZE USR output
420 OUT 115,13
430 RETURN
500 REM ***** Send *****
510 POKE 23692,255
520 FOR x=1 TO LEN p$
530 RANDOMIZE USR output
540 OUT 115,CODE p$(x)
550 IF p$(x)=" " THEN PRINT p$(x);
560 NEXT x
570 RETURN
600 REM ***** intake word *****
610 LET c$="": ON ERR GO TO quit
620 LET v$=CHR$ USR input: PRINT v$;
630 IF v$=CHR$ 13 THEN PRINT : GO TO ret
640 LET c$=c$+v$: GO TO 620
700 REM ***** timer *****
710 LET time=INT ((PEEK 23672+256*PEEK 23673+256*256*PEEK 23674
)/60): LET hr=INT (time/3600): LET min=INT ((time-hr*3600)/60)
720 LET x$=(STR$ hr+" hr, " AND (hr>0))+STR$ min+" min, "+STR$
(time-(hr*3600+min*60))+ " sec"
730 RETURN
```

```

1000 REM ***** Autoans *****
1010 OUT 119,34
1020 OUT 119,0: REM Hangs up
1030 REM ansloop
1040 LET a=IN 119
1050 IF CODE INKEY%=195 THEN GO TO edit
1060 IF a=5 THEN GO TO ansloop
1070 FOR x=1 TO 5: BEEP .1,40: NEXT x
1080 OUT 119,2
1090 OUT 119,34: REM MODEM seek tone
1100 PAUSE 300
2000 REM ***** Warmstart *****
2010 FOR x=7 TO 0 STEP -1: BORDER x: BEEP .1,x: NEXT x: OUT 119,
64: OUT 119,123: OUT 119,55: POKE 23674,0: POKE 23673,0: POKE 23
672,0: REM set online timer
2020 PAUSE 30: FOR x=1 TO 30: RANDOMIZE USR output: OUT 115,0: N
EXT x
2030 IF IN 119<128 THEN GO TO quit
2040 LET p%=CHR% 26+CHR% 31+CHR% 28: GO SUB send: REM clear rec.
screen
2050 FOR x=1 TO 5: GO SUB n1: PRINT : NEXT x
2060 LET p%=t$: GO SUB send: REM send logon bulletin
2070 FOR x=1 TO 5: GO SUB n1: PRINT : NEXT x
2080 LET p%="Please enter full name and date:"+CHR% 5: GO SUB se
nd: GO SUB n1
2090 LET ret=FN b(): GO TO intake
2100 LET u%=c%+CHR% 13: LPRINT c%+" ";
2500 REM **** inputcom *****
2510 RESTORE 2520: GO SUB timer
2520 DATA "T/S Tinyboard Main Menu","Time on = "+x%,"<R>ead Mess
ages","<L>eave Message","<C>hat mode","<G>oodbye"," ", "Choice ?:"
2530 FOR p=1 TO 8: GO SUB n1: READ p%: GO SUB send: PRINT
2540 NEXT p
2550 LET ret=FN b(): GO TO intake
2560 IF c%="R" OR c%="r" THEN GO TO read
2570 IF c%="L" OR c%="l" THEN GO TO leave
2580 IF c%="C" OR c%="c" THEN GO TO chat
2590 IF c%="G" OR c%="g" THEN GO TO quit
2600 GO TO inputcom
3000 REM ***** Read Messages *****
3010 GO SUB n1: GO SUB n1: RESTORE 3020
3020 DATA STR% c% "message"+("s" AND c<>1)+" on Tinyboard.,"Las
t message left was #"+STR% y1," ", "

```

```

3140 PRINT m$(y,v); RANDOMIZE USR output: OUT 115,0: CODE m$(y,v)
3150 IF v>64 THEN NEXT v
3160 IF (v>32 AND CODE m$(y,v)=13) THEN LET v=64: GO SUB n1
3170 IF (v<32 AND CODE m$(y,v)=13) THEN LET v=32
3180 NEXT v
3190 GO SUB n1
3200 GO TO read
3400 REM ***** List Senders *****
3410 FOR p=1 TO c: LET p%=STR% p: GO SUB send: FOR v=38 TO 64
3420 LET p%=m$(p,v): GO SUB send: IF m$(p,v)=CHR% 13 THEN GO TO
3440
3430 NEXT v
3440 PRINT : NEXT p
3450 LET p%="Choose a <num> or <M>enu": GO SUB send: LET ret=FN
b(): GO TO intake
3460 GO TO 3070
3600 REM ***** List Addressees *****
3610 FOR p=1 TO c: LET p%=STR% p: GO SUB send: FOR v=4 TO 32
3620 LET p%=m$(p,v): GO SUB send: IF m$(p,v)=CHR% 13 THEN GO TO
3640
3630 NEXT v
3640 PRINT : NEXT p
3650 GO TO 3450
4000 REM ***** Leave Message *****
4010 LET y1=y1+1: IF y1>20 THEN LET y1=1
4020 DIM l$(1000)
4030 GO SUB n1: LET p%="Message to: ": GO SUB send: LET ret=FN b
(): GO TO intake
4040 LET l$( TO 32)="To: "+c%+CHR% 13: LET p%="From: "+u%: LET l
$(33 TO 64)=p%: GO SUB send
4050 GO SUB n1: PRINT : LET p%="Input message (900 chrs max)..
<Ctrl-C> to SAVE, Ctl-D to abort": PRINT : GO SUB n1
4060 GO SUB send: PRINT "'': GO SUB n1: GO SUB n1
4070 ON ERR GO TO quit: FOR v=65 TO 1000: POKE 23692,255: LET
m1=USR input: REM ctl-C= 03H = ETX, Ctl-D=04=EOT
4080 LET l$(v)=CHR% m1: PRINT l$(v); IF m1=3 THEN LET v=1000
4090 IF m1=4 THEN LET y1=y1-1: GO TO inputcom
4100 NEXT v: PRINT : LET m$(y1)=l$
4110 LET c=c+1: IF c>20 THEN LET c=20
4120 GO TO inputcom
5000 REM ***** chat *****
5010 ON ERR GO TO quit: LET k=0
5020 PRINT : GO SUB n1: LET p%="Paging sysop ....."
: GO SUB send: PRINT : GO SUB n1
5030 FOR i=1 TO 128: IF INKEY%<>"" THEN GO TO 5060
5040 LET p%="": GO SUB send: BEEP .1,10
5050 NEXT i: LET p%="The sysop is not available.....": FOR x=1 T
O 10: BEEP .1,1: NEXT x: GO SUB n1: GO SUB send: PRINT : GO SUB
n1: GO TO inputcom
5060 GO SUB n1: PRINT : LET p%="You are now in chat mode"+CHR% 1
3+"<Ctl-C> to exit": FOR x=1 TO 10: BEEP .1,x/2: NEXT x: GO SUB se
nd: GO SUB n1
5070 CLS : PRINT "You are in chat mode with"'+u%'+"Synbl Shift/NO
T to escape...."
5080 IF k=3 OR CODE INKEY%=195 THEN GO TO inputcom: REM 195=not
5090 POKE 23692,255
5100 LET a=USR statchk
5110 IF (a=2 OR a=3) THEN LET k=USR input: PRINT CHR% k; IF k=
13 THEN PRINT " ";
5120 IF (a=1 OR a=3) AND INKEY%<>"" THEN GO SUB 5140

```

```

5130 GO TO 5080
5140 LET p$=INKEY$: GO SUB send: IF CODE p$=13 THEN PRINT "'";
5150 RETURN
7000 REM **** Quit Message base *****
7010 ON ERR RESET
7020 GO SUB timer: LPRINT ": ";x$
7030 PAUSE 30: CLS : RANDOMIZE USR output: OUT 115,28: RANDOMIZE
  USR output: OUT 115,31
7040 GO SUB nl: CLS : PAUSE 10
7050 LET p$="Connect time was "+x$+ ".": GO SUB send: PRINT : GO
SUB nl: LET p$="Thank you for calling the T/S Tinyboard... Han
g up now"
7060 GO SUB send
7070 PAUSE 120
7080 OUT 119,64: OUT 119,0: OUT 119,0
7090 PAUSE 60: CLS : FOR x=60 TO 1 STEP -5: BEEP .1,x: NEXT x: 6
0 TO autoans
8000 REM ***** edit *****
8010 CLS : PRINT "Sysop Editor""<R>ead Messages""<D>elete Me
ssages""<L>eave Messages""<Q>uit Editor""<S>ave Message Ba
se"
8020 LET i$=INKEY$
8030 IF i$="" THEN GO TO 8020
8040 IF i$="r" OR i$="R" THEN INPUT "Message #? ";x: PRINT "Mes
sage #";x/m$(x)"/"End of Message": PAUSE 0: GO TO edit
8050 IF i$="d" OR i$="D" THEN INPUT "Delete message #? ";x: INP
UT STR$ x+" Are you sure? (y/n) ";i$: IF i$="y" THEN GO SUB 840
0
8060 IF i$="l" OR i$="L" THEN GO SUB 8600
8070 IF i$="q" OR i$="Q" THEN CLS : GO TO autoans
8080 IF i$="s" OR i$="S" THEN GO SUB save+20
8090 GO TO edit
8400 REM ***** Delete message *****
8410 FOR i=x TO 19: LET m$(i)=m$(i+1): NEXT i: LET m$(20)=1$
8420 LET c=c-1: IF c<0 THEN LET y1=0
8430 LET y1=c
8440 RETURN
8600 REM **** Leave message *****
8610 LET c=c+1: IF c>20 THEN LET c=20
8620 LET y1=y1+1: IF y1>20 THEN LET y1=1
8630 PRINT "Message #";y1: FOR x=1 TO 1000: PAUSE 0: LET m$(y1,x
)=INKEY$: PRINT m$(y1,x);: IF CODE INKEY$=195 THEN LET m$(y1,x)
=CHR$ 3: RETURN
8640 NEXT x: RETURN
9000 REM ***** initialization *****
9010 REM 20 message base
9020 PAPER 0: INK 7: BORDER 0: CLS
9025 LET p=64261: POKE 26704,INT (p/256): POKE 26703,p-(INT (p/2
56)*256): LOAD ""CODE
9030 LET y1=0: LET y=y1: LET c=y
9040 DIM y(2): DIM 1$(1000): DIM m$(20,1000): LET m$(1)="No mess
ages found ....."+CHR$ 3
9050 LET nl=400
9060 LET send=500
9070 LET intake=600
9080 LET timer=700
9090 LET autoans=1000
9100 LET ansloop=1030
9110 LET warmstart=2000
9120 LET inputcom=2500
9130 LET read=3000

```

```

9140 LET leave=4000
9150 LET chat=5000
9160 LET quit=7000
9170 LET edit=8000
9180 LET mc=9500
9190 LET title=9700
9200 LET save=9800
9210 LET statchk=64000
9220 LET input=64100
9230 LET output=64200
9240 GO SUB title: GO SUB mc
9250 FOR x=1 TO 3: BEEP .1,25+x: NEXT x: INPUT "Do you wish to l
oad a message base ? ";x$: IF x$="y" OR x$="Y" THEN PRINT #1;"2
Part load...": PAUSE 100: LOAD "" DATA m$(): LOAD "" DATA y():
LET y1=y(1): LET c=y(2)
9260 INPUT "Do you wish to load a logon bulletin? ";x$: IF x$="y
" OR x$="Y" THEN PRINT #1;"Start logon tape (with data as t$)..
..": LOAD "" DATA t$()
9270 PRINT ""(NOT) from most modes will exit to sysop co
ntrol mode." : BEEP .1,35: BEEP .1,38: PAUSE 180
9280 PRINT "'Now going to Autoanswer mode": FOR x=1 TO 3: BEEP .
1,10+x: PAUSE 180: CLS : GO TO autoans
9500 REM ***** code loader *****
9510 RESTORE 9520: FOR x=64000 TO 64008: READ n: POKE x,n: NEXT
x
9520 DATA 175,219,119,230,3,79,6,0,201
9530 RESTORE 9540: FOR x=64100 TO 64132: READ n: POKE x,n: NEXT
x
9540 DATA 219,119,230,128,200,175,219,119,230,2,40,244,219,115,6
,0,79,219,119,230,126,200,175,219,119,230,1,40,244,121,211,115,2
01
9550 RESTORE 9560: FOR x=64200 TO 64212: READ n: POKE x,n: NEXT
x
9560 DATA 219,119,230,128,200,175,219,119,230,1,40,244,201
9570 RETURN
9700 REM ***** titles *****
9710 CLS : PRINT t$: CIRCLE 123,80,20: RESTORE 9760: PLOT 127,10
3: FOR i=1 TO 11: READ x,y: DRAW x,y: NEXT i
9720 FOR i=1 TO 9: READ x,y: BEEP x,y: IF i=3 THEN PAUSE 4
9730 IF i=6 THEN PAUSE 8
9740 NEXT i
9750 RETURN
9760 DATA 20,0,-5,-20,-15,0,-5,-10,-8,0,-6,-17,0,23,6,0,4,9,6,0
,2,15,.2,10,.2,5,.2,2,.2,10,.2,5,.2,2,.2,10,.2,5,.2,2,.2,5,.2,10
,.2,10
9800 REM ***** save *****
9810 CLEAR : SAVE "Tinyboard" LINE 0: SAVE "prt"CODE 64256,1111:
PRINT "rewind and VERIFY": VERIFY "": GO TO 9000
9820 INPUT "Data SAVE name ? ";x$: SAVE x$ DATA m$(): LET y(1)=y
1: LET y(2)=c: SAVE x$ DATA y(): RETURN
9900 REM ***** utilities *****
9905 REM ** Renumber **
9910 INPUT "Look for? ";l/"Stop at? ";s/"Start new from? ";n/"Al
l OK? (y/n) ";x$
9915 IF x$("<y") THEN GO TO 9910
9920 IF s>9900 THEN LET s=9900
9925 LET x=26710
9930 IF PEEK x*256+PEEK (x+1)<1 THEN GO TO 9960
9940 IF PEEK x*256+PEEK (x+1)=s THEN STOP
9945 POKE x,INT (n/256)
9950 POKE x+1,n-(PEEK x*256)
9955 LET n=n+10
9960 LET x=x+PEEK (x+2)+256*PEEK (x+3)+4
9965 GO TO 9930

```

Rights To Sinclair CPUs Purchased

By MARYBETH KERRIGAN

By Amstrad Firm

MANAGEMENT INFO. SYSTEMS WEEK 4/14/86

LONDON (FNS)—Sinclair Research Ltd., the troubled British home computer maker, last week sold the worldwide rights to manufacture and sell Sinclair computers to Amstrad Consumer Electronics Plc. for \$7.3 million.

The acquisition will make Amstrad Britain's largest supplier of home computers with 60 to 80 percent of the U.K. market.

Sir Clive Sinclair, the flamboyant entrepreneur and founder of Sinclair Research, also announced a major restructuring of the company, which last August was rescued by its banks and creditors.

Sinclair Research will become a holding company with three subsidiaries that will develop wafer-scale semiconductor products and telecommunications equipment.

Amstrad said it plans to concentrate on improving the Sinclair overseas marketing organization. In the United States, Sinclair could benefit from Amstrad's recently signed exclusive distribution agreement with Sears, under which the retailer will sell Amstrad home computer products in its U.S. and Canadian outlets. According to an Amstrad spokesman, the company is negotiating with Sears to extend that agreement to include Sinclair products.

Will Acquire Inventory

Amstrad has agreed to acquire all of Sinclair's existing stocks for an undisclosed sum and will continue to fill existing orders through Sinclair's U.K. manufacturers.

But Amstrad chief executive Alan Sugar said the three U.K. subcontractors, Timex, AB Electronics and Thorn EMI, will have to compete in price and quality for future orders. Amstrad manufactures its products in South Korea.

Sugar said the two companies' product ranges are complementary, with Sinclair occupying the lower, entertainment-oriented end of the home computer market and Amstrad the upper end, geared towards more serious users.

According to Sugar, the company will take a seasonal approach to the business, concen-

trating on Sinclair sales for four months of the year around Christmas, then focusing on Amstrad sales the rest of the year.

"We're now poised perfectly to do entertainment computers when needed, and we have plenty to do during the other eight months of the year," he said.

Amstrad intends to refine and enhance the Sinclair products, whose sales have suffered from complaints of poor quality.

Ready By Christmas

Sugar said the enhancements should be completed in time for the Christmas season, when the company plans to introduce a version of the Sinclair Spectrum for \$203.

Amstrad also plans to set up a software quality control section to advise and certify third-party software houses. Sugar noted that Sinclair's poor reputation has stemmed partly from a glut of programs that were supposed to work on the Sinclair but didn't.

Amstrad is likely to drop the Sinclair QL computer, which was an unsuccessful attempt to crack the upper end of the market. Sugar noted that production of that model stopped months ago and said a "de-stocking" of the product would take place.

Under its agreement with Sinclair, Amstrad will have the option to market any computers designed by Sinclair in the future. Although Sir Clive will be allowed to design home computers under a name other than Sinclair, he said he has no plans at present to do so.

Under Sinclair's reorganization, the company is floating out three separate companies.

One, a joint venture with Barclays Bank, in which Sinclair will have a large minority share, will develop integrated wafer-scale semiconductor products based on proprietary technology from SRLS Metalab research facility. The first project there will be the development of a large memory, with 40 Mbits on a single piece of silicon.

Another company, based in Cambridge, will carry out con-

tract research and will be headed by Sir Clive and Jim Westwood, Sinclair director of research.

The third, a partnership with Timex, in which Sinclair will retain a large majority share, will develop innovative telecommunications products. That business will be based in Winchester.

Sinclair Research, which at one time was valued at \$199 million, encountered cash-flow problems last year and had to seek external financing.

Robert Maxwell, publisher of the Mirror Group Newspapers, last June made a \$17.5 million takeover bid. When that bid fell through in August, Sinclair was rescued by its banks and creditors.

The agreement with its creditors lapsed in late March and Sir Clive said he recently was approached by someone who wanted to invest in the company. But Sir Clive said the Amstrad offer was more attractive because it would enable him to get out of marketing and concentrate on research and development.

Sir Clive, who several weeks ago owed creditors between \$8.75- and \$10.25-million, no longer owes his creditors anything after the Amstrad deal. He said the creditors were "supportive" of the acquisition.



"I always said I was an inventor," he said. "Once a product is developed, I want to get out."

Contrib. by V. Smith
& Jack Hyaong

Wake Up to Bulletin Board Opportunities

By P.L. Olympia
Special to GCN

It is the middle of the night. You have just finished installing your new printer that everyone had been recommending. Trouble is, you can't seem to make it work. Where will you go for assistance? Why, a remote bulletin board system, of course.

Unless you have been hibernating for the last few years, you probably know that an RBBS is usually an unattended, microcomputer-based electronic messaging and file transfer system dedicated to the free exchange of information among its users.

First of Two Parts

RBBS systems are available for most types of microcomputers. Among the oldest and perhaps most versatile is the version that exists for CP/M micros called the Remote CP/M system.

As you might suspect, today's most popular RBBS systems operate on the IBM PC, XT, AT and compatibles. The most common RBBS host software systems for these machines are RBBS-PC, Fido and PCBoard. PCBoard is currently sweeping the country, primarily because it offers the most functions and performs faster and more elegantly than the others.

The message or conference sections of an RBBS offer free advice from experts around the country, or even around the world, depending on its audience. If you need assistance, you normally leave an electronic message describing your problem. Other participants who can help you will either leave a message in response to your question or even phone you to give more detailed advice.

This facility, like other RBBS facilities, is intended as a two-way street — you are expected to provide advice to others when you are in a position to help them.

Many bulletin boards have a special message section called "conference." This works pretty much like the usual public message section except that the message topic is more focused. It could be confined, for example, to a topic such as data base management or to a particular application product such as dBase III.

Depending on the board's policy, you will usually need to be preregistered for a conference before you can participate. A conference may have its own set of public-domain files for sharing that can only be transferred when you are in that conference section.

The RBBS file section lets you share public-domain programs and files with other users. The file section is usually organized in directories by generic topics, for example, printer utilities, software reviews,

word processing, spreadsheet and communications.

The directory listings include the files' names and sizes, short descriptions of their contents and the dates when they were posted. An RBBS may also have the "doors" feature, which allows remote callers to exit to DOS to run a program as though they were on the computer console. This is an excellent vehicle for providing interactive assistance to remote callers. Unfortunately, because of several security issues that the doors facility raises, it is often implemented only on in-house or private systems.

An RBBS is maintained by the system operator (sysop). You may communicate with the sysop by chatting interactively keyboard to keyboard, leaving messages in the public-message or conference section or leaving a comment. The comment facility is a private message function intended only for the sysop.

The sysop, in turn, can post messages for all callers by way of the welcome screen, news screen or bulletin capability. Both welcome and news screens are presented to you during log-on. The bulletins may be accessed from the main menu like other RBBS functions.

Sysops of public boards often are computer hobbyists who, aside from being gluttons for punishment, consider their work a civic duty.

Types and Uses of RBBS

An RBBS may be private or public. Private boards are often operated by commercial or government organizations for use by employees. Public boards may be open to any caller, may require preregistration or may be accessible only to those who pay a subscription fee.

An RBBS is an extremely cost-effective tool for delivering up-to-date information to both micro and mainframe users. And it saves paper. Users may share things such as public-domain and internally developed software, bug reports and fixes, meeting announcements, document abstracts, newly discovered techniques and productivity tips. Organizations with offices in different time zones appreciate that an RBBS can send or accept messages and files unattended at any hour.

While much the same thing can be done with a mainframe (forgetting about cost comparisons for the moment), an RBBS has a feature that no mainframe or mini-computer has — the ability to permit remote users to run popular software while an instructor or expert watches at the RBBS console. The instructor can temporarily take over the operation to show the remote user proper command syntax and the like.

My company uses two boards internally

in other ways. Our field offices may transmit to the boards their budget data, documents, meetings calendar and action items on a regular basis. That would seem risky on a wide-open public system; this use reflects our confidence in our private system's security. The RBBS lets us convert documents and mailing lists on Wang Alliance and OIS systems into IBM PC format. We also use them to provide updated versions of software we have developed to clients in far-flung places.

What You Need

■ A PC and a 300, 1200 or 2400 bit/sec modem. Many boards that support 2400 bit/sec no longer support 300 bit/sec.

■ A PC communications program that supports the XModem protocol for error-checking.

System operators (Sysops) expect RBBS callers to observe common-sense codes of behavior. When you call an RBBS, imagine yourself in the shoes of the sysop. He is offering a free public service, and he needs your cooperation. Here are a few guidelines to help assure continued use of your favorite board:

■ **Be an active participant.** Don't just occupy space. Give as much as you can, either by uploading new and useful files or answering public messages asking for advice. Read the messages. It is a "bulletin board," after all.

■ **Don't be greedy.** Most sysops will not tolerate callers who log in under multiple names to pig out on files. An RBBS is based on the spirit of sharing. Using multiple names so you can have more time denies other callers their chance to participate and contribute. Resist the temptation of calling every day just to get files.

■ **Pay attention to the board's welcome and news messages and bulletins.** The sysop may be trying to tell you something.

■ **Do not upload copyrighted programs.** Doing so is the fastest way to get banned from all boards.

■ **Don't attempt to break into the board.** Help persuade others with malicious intentions to abandon their counterproductive activities. Remember, the sysop is performing a valuable service. Damaging the board hurts you as much as it hurts him.

■ **If you download a shareware program from the board and use it, you owe it to yourself to make the requested contribution.** If you use the program in your organization, the contribution is not optional. Unless you cooperate, everyone's source of inexpensive and excellent programs will disappear, and you will be at the mercy of software vendors, many of whom charge a king's ransom for products that don't do half of what they claim.

Newsletter Review

INFO-G.U.T.S

Grupo de Usuarios Timex Sinclair de Mexico

Apartado Postal 75-170

C.P. 07300

Mexico, D.F.

We have just received our first issue of Info-G.U.T.S. Though I don't speak Spanish, I would like to share my impressions of the n/1.

It is an interesting effort - 36 pages, center stapled, newsprint, and lightly printed. It has been entirely typed using Tasword and the 2040 printer. This, combined with the light printing, makes the text rather hard to read. Listings, however, have been printed using the "bold" option, and are fairly legible.

The layout is pleasant, with a good mix of graphics, text, and listings. There are some inspired cartoons, and a well organized table of contents. A large number of programs have been translated from US newsletters, including Scrolling T/S 1000/1500 por Brian Little. Attributions to authors and users groups are carefully given.

Info-G.U.T.S. Vol. 1, #4 is available in the club library. Even if you don't speak Spanish, it's worth a look!

A FASTER WAY TO EVALUATE (-1)[↑]N

The March 1985 CATS gave a hint on how to work around an error condition when evaluating any expression with $(-1)^{\uparrow}N$. The suggested idea is to evaluate $\text{COS}(N * \text{Pi})$ instead. This is a quick solution from the point of view of writing a program but a faster running program is possible, using a well-known method of determining if a number is even or odd. Assume that $A = (-1)^{\uparrow}N$; A will be (+1) if N is even and (-1) if N is odd. The value of A can be found with the following line:

```
100 LET A=1:IF (INT (N/2)*2-N)  
<> 0 THEN A=-1
```

This line will execute 3 times faster than

```
100 LET A= COS (N*Pi)
```

Even though the latter appears to involve less operations, the COS function is one of the slower math functions on the T/8. A thousand iterations of the second line takes about 50 sec. as compared to 17 sec for the first line.

Mike Monis

Your One-stop Electronic Parts Store

Special to CATS
5% off any purchase if
you bring your n/1
(with name attached)

Full line electronic components
and test equipment.

Parts and equipment
for the radio amateur and enthusiast.

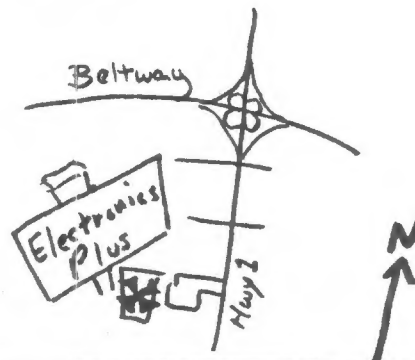
Reasonable prices.

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Sat: 10AM - 3PM
Sun: Closed



Thanks for your PAID AD!



9600 Baltimore Blvd., College Park, Maryland 20740

(301) 441-9009

PRESS RELEASE

STARTING

Starting STARTING is not stuttering, it is merely a tongue-twister. Thus spoke the co-creator of the new ARTIFICIAL INTELLIGENCE national ~~Time4/Sinclair Times~~ group. Acronymically called "SINCLAIR TIMES ARTIFICIAL INTELLIGENCE GROUP" is called STARTING.

STARTING at the Trenton Computer Festival '86 (April 19th & 20th) and at the Midwest Time4/Sinclair Computer Fest (May 3rd & 4th), will present an interactive, voice synthesized, ARTIFICIAL INTELLIGENCE PROGRAM where all participants will receive a printout of their A.I. conversations with the computer.

In addition, simply to get the attention of fair attendees, STARTING will feature a display consisting of two graphics. In the middle pointing to both

NEIGHBORS - We may use different modes of transportation but we share a common language BROOKLYNESE. The graphic on one side is of a bus with Ralph Cranden, Alice, Ed Norton, and Irixie-Bensonhurst Brooklyn people. The graphic on the other side is that of a large ethnic family grouping from the Star Trek Starship Enterprise.

One out of every five Americans was either born in Brooklyn, lived in Brooklyn, or is related in some way to someone living in Brooklyn. Brooklynese is an ARTIFICIAL language derived from the INTELLIGENCE of various ethnic peoples. Our derived NATURAL LANGUAGE now communicates to the entire world.

Please join our cultural mix by communicating in this universal ARTIFICIAL INTELLIGENCE language of BROOKLYNESE.

The future of computing is in ARTIFICIAL INTELLIGENCE (A.I.). We are beginning a national A.I. group. Please enter (For the fee of one dollar) your name in our A.I. Registry. It will help to provide the necessary funding in order to make A.I. information/communications and interactivities possible.

THANK YOU

P.S. A robot - NIRA will be nearby dispensing pencils to registrants.

Hey, fellows, the CATS being announced by the Fairfax Hospital is not really for us unless you count TS computing as an addiction.

Their CATS is Comprehensive Addiction Treatment Service.

A very interesting and informative piece of writing appears in the May 1986 issue of ANALOG SCIENCE FICTION SCIENCE FACT. It is "Phreak Encounter" and deals with BBS in a very familiar setting. The author is a local resident or researched the area very well.

News From All Over!

Martin Brennan NYTSE n/1

As a "bonus", here is the BASIC routine that I used to scan a program listing into a string by segments, then POKING the contents thereof into memory above RANTOP to be saved as a CODE file.

Note that the string has been terminated with a character-zero, or null, so as to be compatible with MSCRIPT text files.

```
190 REM LIST. BREAK SCROLL. GO-
TO 200. AFTER STOP LIST NEXT SEG-
MENT. GOTO 210. REPEAT FROM STOP
FOR LENGTH NEEDED. GOTO 400.
200 LET P#="" : LET L#="": DIM B
(132) : LET R#="CHR# 13
210 FOR I=0 TO 21
220 FOR J=0 TO 31
230 LET L#="L#-SCREEN# (I,J) : IF
J=31 AND L#="LEN L#" THEN LE
T P#="": GO TO 300
235 IF J=31 THEN LET L#="L#-R#
240 NEXT J
245 LET P#="P#-L# : LET L#=""
250 NEXT I : STOP
300 IF L#="" THEN STOP
310 LET P#="P#-1 : IF L#(P#)="" THEN
GO TO 310
320 LET L#="L# (TO P#)-R#
325 PRINT "I AT 0.0 FLASH 1, L#
DEEP .3.9. INPUT ", I : GO TO 240
400 LET P#="P#+CHR# 0 : PRINT P#
```

A VAL# Application: Prompts

A recent CATS article (Nov. 1985) asked for applications for the VAL# function. While not earth-shaking, the following idea may be useful in programs with lots of INPUT statements: Define a string variable to be a phrase which is to be used in a number of prompts and use VAL# to allow this variable to be properly interpreted inside the INPUT statements. Some examples to show syntax follow.

```
10 LET P#="ENTER THE VALUE OF "
20 LET X#="THE X-COORDINATE "
30 INPUT VAL# "P#+X#" : X
40 INPUT VAL# "P#" : Y : Y
It might be noted that VAL# simply allows one to use strings inside of INPUT statements in the same way as they can be used in PRINT statements. Whereas PRINT "P#" will print the string defined by P#, INPUT "P#" will print P# - unless you prefix VAL#.
```

Mike Morris

GRUPO DE USUARIOS TIME4/SINCLAIR DE MEXICO

EVERETT TALAVERA
TLALAM N 20
CALLE TALAVERA
C.P. 11370
MEXICO, D.F.

30/3/86

BEAR C.A.T.S.:

IT HAS BEEN A LONG TIME AND SINCE WE LAST HEARD OF YOU, MARION RODRIGUEZ SENT IN APRIL OF LAST YEAR AN ENVELOPE FOR A FULL YEAR SUBSCRIPTION TO "C.A.T.S." NEWSLETTER. AFTER A FEW MONTHS OF NO ANSWER AND NO MAGAZINE, WE KNEW THAT THE POSTOFFICE MEN HERE IN MEXICO HAD STOLEN OUR \$ 15 DOLLARS. AS THIS HAS HAPPENED VERY OFTEN WE WISH TO KNOW IF YOU COULD ACCEPT AN EXCHANGE OF YOUR MAGAZINE FOR OUR NEWSLETTER. WE ALSO EXCHANGE NEWSLETTERS WITH SEVERAL USERS GROUPS. I HOPE YOU COULD ACCEPT THE EXCHANGE SO WE DONT HAVE TO RISK SENDING THE MONEY AGAIN.

I AM SORRY ABOUT THE LATENESS OF THIS ISSUE BUT OUR GROUP HAD A TOTAL REORGANIZATION DUE TO THE CHANGING OF THE TIME4 (PARTIALLY COMPUTERS (SEE ATTACHED LETTER) TO MEXICO. IF YOU NEED MORE DETAILS ABOUT THIS JUST SEND YOUR QUESTIONS AND I WILL ANSWER THEM ALL. IF YOUR WISH, FEEL FREE TO PRINT THE LETTER WHERE THE NEWS ON THE COMPUTERS ARE. WE WILL BE PROUD TO FIND OUR LETTER IN YOUR FINE NEWSLETTER.

AS EDITOR OF A T/S NEWSLETTER, I WOULD LIKE IF YOU COULD GIVE ME THE DIFFERENCES BETWEEN THE T/S 1000 AND THE T/S 1500. SOME PROGRAMS LIKE HIGH RESOLUTION, ZX-LR3B, THOSE HIGH RESOLUTION GAMES FROM SOFTWARE FARM, ETC. ARE SAID INCOMPATIBLE. WHY ???

I PROMISE TO HAVE THE NEWSLETTER AT LEAST EVERY 2 MONTHS. I WILL TRY MY BEST TO HAVE IT A MONTHLY PUBLICATION (PUFF). ONLY WE THE EDITORS KNOW WHAT WE HAVE TO DO TO GET OUT AN ISSUE !!!

WELL C.A.T.S., I HOPE YOU UNDERSTAND US AND ACCEPT THE NEWSLETTER EXCHANGE.

"LET'S KEEP THE T/S FLAME ALIVE TOGETHER"

EVERETT TALAVERA
C.A.T.S. DE MEXICO

P.S. WRITE BACK SOON !!!

SURVEY

Capitol Area Time/Sinclair Users' Group
P.O. Box 725
Bladensburg, MD 20710

Name _____
Address _____
Phone Home _____ Office _____ ZIP _____

Memberships - \$6.00 (family/individual); make checks payable to C.A.T.S.
If family membership, please list family members participating:

Occupation _____
Ham Radio call sign _____
Equipment
ZX 80 _____ RAM size _____
KA 80 _____ full keyboard _____
ZK 51 _____ Printer _____
TS 1000 _____ type _____
TS 2000 _____ other interface _____
Special interest use for computer: ie, games, ham radio interface,
business, other, etc. _____

Languages: Basic _____ Other _____
Machine _____
No. of years computer experience _____
What committees would you like to serve on? _____

Comments: *Where did you hear of C.A.T.S.?*

Do not write below:
Dt. Pd. _____ Amt. _____ Membership No. _____
Ch. _____ Ck. _____

While at meetings, I have heard many members asking questions about printers - questions which, as one in the market for a printer, I would be interested in having answered. Accordingly, this survey is being conducted. Please HOOK PRINT all responses, and turn in at the meeting. The answers will be summarized and provided (hopefully) in the _____ Mt.

Gene Carbonneau

NAME: _____
PHONE NO. _____

EQUIPMENT _____ MAKE & MODEL _____ COST _____

COMPUTER _____

PRINTER _____

INTERFACE _____

MODEM _____

INTERFACE _____

HOW DO YOU RATE THOSE HARDWARE ITEMS (UNSATISFACTORY - ACCEPTABLE - GOOD - EXCELLENT) INDIVIDUALLY AND AS COMBINATIONS?

EQUIPMENT _____ RATING _____

COMPUTER _____

PRINTER _____

INTERFACE _____

COMBINATION OF ABOVE _____

MODEM _____

INTERFACE _____

COMBINATION (WITH COMPUTER) _____

COMBINATION (WITH PRINTER) _____

THANK FOR YOUR TIME AND EFFORT

CRYPTOGRAM:

OHYX OSYL; ADBY XKBSAMPB XEFNCANYT

FBA ADB TKBSA XKBSAEK. GBZZ, NBKDSNO

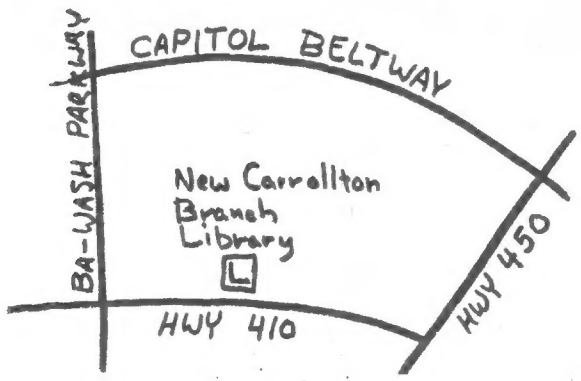
ADBH'KB READ MY REEL DBSPBY AKHMYT

YEA AE BYPH HECK XSAO YBGOZBAABK.

The mailing address of the Capitol Area Timex/Sinclair User's Group is:
 Capitol Area Timex/Sinclair User's Group
 P.O. Box 725
 Bladensburg, MD 20710
 CATS is a non-profit special interest organization dedicated to serving the interests of those who own, use, or are interested in learning more about the Timex/Sinclair family of personal computers.
 The official contact person for CATS is JULES GESANG: 301#922-0767
 Meetings are held on the second Saturday of each month at 2 P.M. in the large meeting room of the New Carrollton Branch Public Library.
 Ham Radio Network Information
 OZK Net.. Wednesdays, 9p.m. local time! 14.345 MHz NVAF NCS
 Eastern Regional Sinclair Net.. Sundays, 1600 Z! 7.245 MHz K0ZF NCS



CATS Newsletter
 P.O. Box 725
 Bladensburg MD 20710



QUINTERO, MANUEL A. 301
 4375 GREENBERRY LANE
 ANNANDALE VA 22003

COME TO OUR MEETING!
 The next meeting of C.A.T.S. will be held on:
 Saturday, May 10, 1986
 11:00 AM - Hardware meeting
 2 - 5 PM - General meeting

At: New Carrollton Public Library
 7414 Riverdale Road (Hwy 410), New Carrollton, MD

IF YOU ARE NOT A MEMBER OF CATS, THIS IS THE ONLY ISSUE YOU WILL RECIEVE
Dues = \$16.00 per year, per family.

First Class